Online training for wind energy professionals

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SEEIT - a European Strategic Partnership

WAsP – the Wind Atlas Analysis and Application Program

Online training for wind energy professionals

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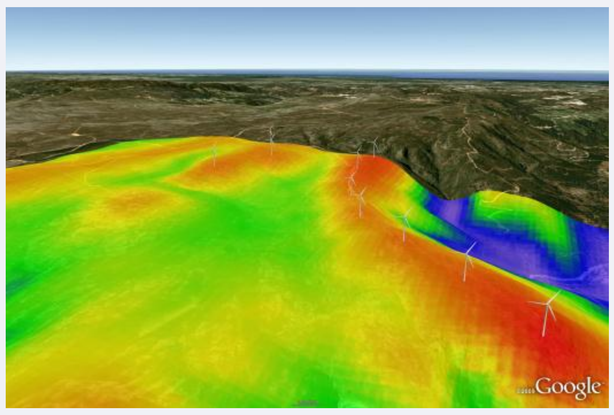
Introduction

An online course in wind energy has been developed by the Technical University of Denmark (DTU). The course builds upon a successful physical course which the Wind Energy Department of DTU has offered to the wind energy industry for more than 20 years. The course objectives are:

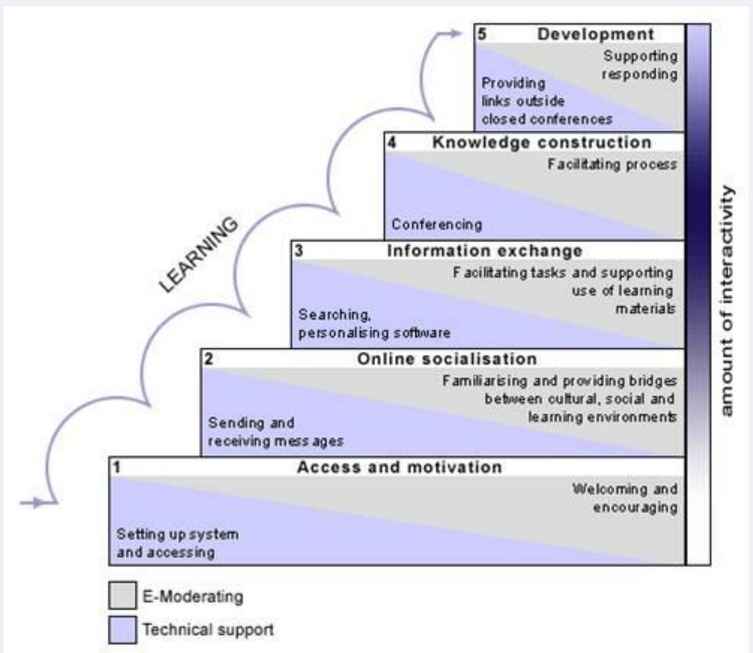
1. To teach participants to use the Wind Atlas Analysis and Application Program (WAsP)
2. To provide participants with enough theory about wind power meteorology to avoid the major pitfalls related to wind resource assessment.



Map of the annual wind power production over a hilly site

WAsP is the wind power industry-standard PC-software for wind resource assessment and siting of wind turbines and wind farms, with more than 4,000 licenses sold in more than 100 countries.

Course design



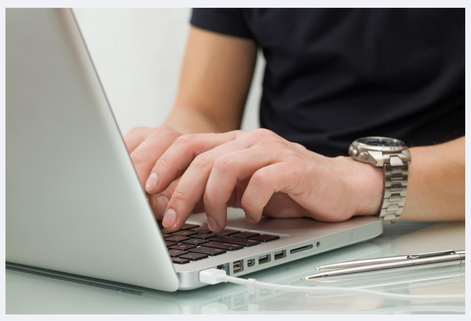
The five-stage scaffolding model used to design the WAsP course. Figure taken from Salmon, G.: E-moderating. The key to teaching and learning online, Routledge Falmer, 2011 (third edition 2011).

The course design is based on a research based scaffolding model for building up communication and active participation for learners online (Salmon, 2011). Fellow participants and the teachers support the learner's cognition and their critical reflection as they go through structured online activities called 'E-tivities' together. As the course progresses, participants become more independent and responsible for their own learning.

Course structure

The WAsP course is designed to run over 10 weeks. A new course module opens every week and participants have the flexibility to work any time during that week.

A module contains 3-4 E-lessons with different learning elements:

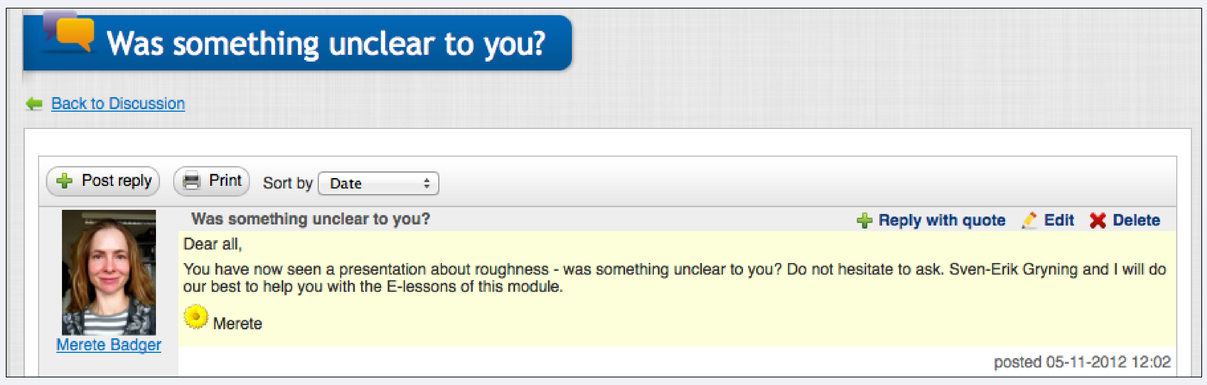


Learning online (© Colourbox)

- **PowerPoint presentations with speak**
- **Hands-on exercises**
- **Screen demonstrations**
- **Group discussions**
- **Self-tests**

E-moderating

The course teachers act as E-moderators. They facilitate the group discussions, answer questions, and motivate the participants.

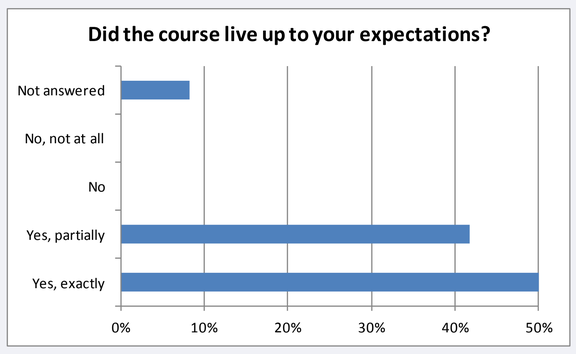


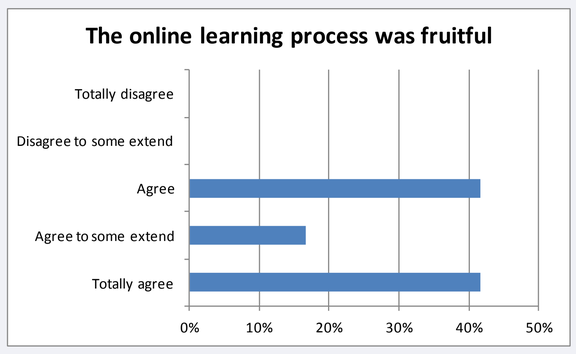
Example of an E-moderator note posted in a forum for group discussion

The frequent contact between participants and teachers is very important for achieving a high completion rate on the course. The aim is that all participants complete the course and receive a course diploma.

Testing the course

The course has been tested twice. Internal testing took place in the Autumn of 2012 with 12 participants from DTU Wind Energy. The participant feedback was positive and everybody completed the course.





Examples of participant feedback from the first test of the WAsP online course

A few issues were pointed out by participants and improved before the second test:

- **The audio quality of recorded presentations was improved**
- **Screen demonstrations were made for all hands-on exercises**
- **Printable course notes were prepared**

An external test is currently running with 24 participants from the wind energy industry and from four technical universities. The participants are located in many different countries around the world and have very diverse scientific and cultural backgrounds.

The next steps

1. Offering the course commercially

Once the participant feedback from the external test is incorporated, the WAsP online course will be ready to be offered to the wind energy industry. The first commercial run will be launched in early September, 2013.

2. Integration with university programs and courses

The online course material is likely to be incorporated in courses at DTU Wind Energy and also in joint educational programs.

3. Connection to the Virtual Campus Hub

Connection of the WAsP course environment to a portal called Virtual Campus Hub is in progress. From the portal, users will be able to access applications offered by different universities with the user name and password of their local university. This simplifies collaboration across borders, e.g. in joint educational programs, and takes advantage of high-speed European E-infrastructures.

Acknowledgement: *The team behind 'WAsP online' and E-learning consultant Anita Monty from Expect Learning are acknowledged for the effort they have put into designing and running the online course.*

SEVENTH FRAMEWORK PROGRAMME

VIRTUAL CAMPUS HUB Part of Explore Energy

The WAsP course is developed as part of project Virtual Campus Hub and is partially funded by the European Commision under the 7th Framework Programme